DOCUMENT RESUME

ED 086 504 SE 016 970

TITLE	Environmental Education. Securing a Foundation for Environmental Quality. A Process for Improving Environmental Education in Wisconsin.
INSTITUTION	Wisconsin Environmental Education Council, Madison.
PUB DATE	Apr 73
NOTE	40p.; State Plan, Disscussion Draft
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Adult Education; *Community Involvement; Curriculum; *Educational Planning; Educational Programs; *Environmental Education; Environmental Research; Objectives; Resources
IDENTIFIERS	Environmental Ethic; State Plans; *Wisconsin

ABSTRACT

A preliminary long-range, broad proposal for environmental education in Wisconsin is presented in this document. Consideration is given for environmental education of the general public as well as the development of school programs. The major goal of this proposal is to establish an environmental ethic in Wisconsin. Present programs and resources are reviewed and plans for implementing the programs to meet the goals and assessed needs are given. The following avenues for providing environmental education are discussed; teacher in-service programs, school curriculum revisions, multi-media programs, instructional television programs, establishment of a state clearinghouse, regional resource centers, statutory review, adult training to produce volunteer and professional people in environmental fields, and increased environmental education research. A list of primary environmental issues facing the state is presented in terms of areas that would be attracted by programs encompassing the topics listed above. (JP)

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ENVIRONMENTAL EDUCATION

Securing a Foundation for Environmental Quality

A Process for Improving Environmental Education in Wisconsin

Prepared for the Wisconsin Environmental Education Council
by its Advisory Committee

SE 016 270

State Plan: Discussion Draft
April, 1973

weec

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To the Reader:

In establishing the Wisconsin Environmental Education Council, Governor Patrick J. Lucey charged it with developing a state plan for environmental education. This discussion draft is the first step toward such a plan.

You have several important opportunities through your review of this draft. First, your comments and suggestions will help improve the final report. But more significantly, we urge you to consider how your interests and activities do or could help implement its recommendations.

Wisconsin's Senator Gaylord Nelson has published a collection of students' letters about their environmental concerns entitled, "What are You and Me Gonna Do?" That could be a theme for this report because rather than merely reciting what needs to be done, it asks the citizens and organizations in Wisconsin to consider together what each can do to better understand and subsequently act on the environmental problems we are facing.

This is 100% Recycled Paper

We are not proposing environmental education solely to enhance our appreciation of nature or to raise our consciousness about water pollution, urban blight or other environmental problems. We are suggesting that environmental education is one central vehicle to find means to solve our problems and to act effectively in implementing those means. The time for awareness alone is at an end. The time for better performance is overdue.

What are you and me gonna do?

The Advisory Committee
Wisconsin Environmental Education Council

We shall never achieve harmony with land, any more than we shall achieve justice or liberty for people. In these higher aspirations the important thing is not to achieve, but to strive...

The problem, then, is how to bring about a striving for harmony with land among people many of whom have forgotten there is any such thing as land, among whom education and culture have become almost synonymous with landlessness. This is the problem of "Conservation education."

Aldo Leopold

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I. INTRODUCTION

A. RATIONALE FOR ENVIRONMENTAL EDUCATION

Most people agree that an environmental crisis exists. With much of the world, we share problems of increasing concentrations of people in congested urban areas where continuing growth and its attendant demands threatens to upset ecological systems and destroy environmental quality. Similarly, many of our rural problems stem from land use practices and from recreational migrations to less congested places where the attracting environmental quality is jeopardized by mounting numbers of users. Also, despite massive cleanup efforts, many of our Wisconsin waters, lands, and air remain fouled by wastes.

While we are now aware of environmental problems and sensitive to their effects on the quality and safety of our lives, we have only begun to change our attitudes toward environmental use and management by accepting a new ecologically sound environmental ethic. We must question the validity of an ethic based on man's dominion to subdue the earth and engender one which accepts man's ultimate responsibility to care for all life on earth. In doing so, we help assure our own survival.

The development of a new environmental ethic depends upon man accepting different value systems, based on ecological principles, in which he recognizes his place in natural systems and not apart from them. We must accept a responsibility and obligation for impacts of use on natural systems. We must not only question our dependence upon technology alone to solve environmental problems, but must also attend to their

causes. We must understand that some economic growth may be achieved only at the expense of a sustaining and enriching environment, and that such growth should be rejected.

Environmental education is the path to formulation and acceptance of an environmental ethic. Such education must take many forms, be continuous, serve in resolving issues, and encompass all of society through formal and informal approaches. It must not only seek to instill ecological understanding but stimulate examination of personal values and attitudes and their effects on environmental use. It must provide an avenue for society to achieve awareness and understanding of specific environmental threats and stimulate identification and evaluation of alternatives.

Wisconsin's citizens must intensify the pace of development of an environmental ethic. We have a long heritage of conservation as a strong beginning. The task is one of quickening the pace. This plan for environmental education in Wisconsin is offered as a guide for our efforts. The task will never end; what follows is a renewed beginning.

B. BACKGROUND AND PURPOSES OF THE PLAN

This plan is the culmination of many efforts over many years. Preparation of the plan includes a stepping back from numerous on-going activities and evolving progress, to review where Wisconsin's pioneering efforts in conservation and outdoor education have brought us, to consider new needs, challenges, and methods, and to recommend guidelines and projects for the next steps forward.

Early History. Conservation education gained official stature in Wisconsin in 1935 with legislative enactment of a requirement that conservation of natural resources be taught in elementary and high schools, and universities and colleges in Wisconsin. Before that landmark date, the roots are many and converging.

Among the earliest was Charles Van Hise, a geologist and President of the University of Wisconsin, who wrote "The Conservation of Natural Resources" in 1910 which foresightedly states:

> Bringing an appreciation of the importance of conservation of the foreground of human consciousness is a work which cannot be done by one man or one organization in one year, or by many men and many organizations in many years. It is a campaign of education which will extend through generations. But losses have already been so great that the movement should be carried forward as rapidly as possible, especially in preventing further wanton waste. This must be done if our descendants are to have transmitted to them their heritage not too greatly depleted.

Even earlier, John Muir started toward national prominence from a boyhood on a Wisconsin farm. Increase Lapham generated perhaps the first widespread concern with a report in 1867 on the disasterous effects of lumbering. Similar caution on soil erosion was stimulated by Thomas Chamberlin. Later came Aldo Leopold, who began his work in Wisconsin in 1924. Since 1935, and aided by such events as the founding of Trees for Tomorrow in 1944, the Audubon Camp at Sarona in 1955, and enactment of ORAP I in 1961, conservation education has been an element of continuing progress and enlightenment in resource management in Wisconsin. The contribution of progress in other elements of education has also been significant in recognition that environment education is not a discipline in itself but is generated by interdisciplinary attention. Nevertheless, progress has not kept pace and Wisconsin shares now a struggle with other

states in trying to respond to complex new educational demands. Previous and existing efforts have reached too few of the State's citizens, and too often those reached are already concerned and interested. Environmental education seeks a wider audience and broader exposure. The content is no longer focused on natural resources but on man and his effects upon and impacts from the environment.

Environmental Rededication. To signify the resurgent response to an alarming challenge, we turn to environmental education as an encompassing concept and process. In that resurgence and redefinition 1970 is a landmark year.

Early in 1970, a Governor's Conference on Environmental Education formulated nineteen recommendations to strengthen instruction, curriculum, materials, and activities. Later in the year the federal Environmental Education Act was enacted and resulting efforts by the U.S. Office of Education promoted broader involvement and cooperation among state educational agencies and other agencies and organizations with environmental education responsibilities and objectives. Wisconsin's response was an ad hoc committee which included representatives from various state agencies and the University of Wisconsin to develop a state plan for environmental education. At the same time, representatives of the Department of Public Instruction, Department of Natural Resources, and the University of Wisconsin began drafting a state environmental education act. Further drafting occurred in an Education Committee of the Governor's Task Force on the Environment. A final version was transmitted to Governor Patrick J. Lucey in the Task Force Report of March 19, 1971.

Governor Lucey acted two months later by signing Executive Order Number 18 which created a Wisconsin Environmental Education Council and charged it with coordinating the state's efforts and with formulating a state plan for environmental education. This report is an initial fulfillment of that charge.

The Advisory Committee to the Wisconsin Environmental Education Council was assigned responsibility for conducting a broadly based planning process. The process included surveys of existing programs, analysis of needs, and identification of alternative courses of action. Until this plan, Wisconsin had no encompassing strategy to coordinate its diverse programs. It had no common set of overall goals through which to seek cooperative implementation among the many public and private contributors. Thus, this plan is a first attempt to organize the disparate activities into a more consistent and complementary pattern. It should also serve as a guide for expansion and improvement and for building new programs.

C. DEFINITION OF ENVIRONMENTAL EDUCATION

Brevity and simplicity are impossible in the definition of environmental education. It may be an indefinable term because it contains elements of process, attitude, and orientation. Nevertheless, Wisconsin chooses to use an expanded version of the definition contained in the federal Environmental Education Act:

> Environmental Education means the educational process dealing with man's relationship with his natural and manmade surroundings, and includes the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, and urban and rural planning to the total environment. Environmental education also means the educational process of developing concepts, attitudes, values, and actions appropriate to fostering man's harmonious relationship with man and interdependence with the natural and manmade surroundings, including the social, political,

cultural, economic, esthetic, and bio-physical dimensions of the total environment.

Environmental education then is extremely broad in scope. It is a multidisciplinary - interdisciplinary process which is issue-centered, problem-centered, and solution-oriented and stresses direct activity on the part of participants.

Finally, environmental education is for all persons and uses every type of communication, formal and non-formal, to reach them. It not only uses planned activities directed toward students in school classrooms, but less definitive and structured activities such as media presentations to the public, and actions by organizations.

D. PREPARATION OF THIS REPORT

To accomplish its responsibility for preparing a state environmental education plan, the Wisconsin Environmental Education Council turned to its fifteen member Advisory Committee. Members of the Advisory Committee were chosen to be broadly representative of Wisconsin's citizens and the various organized interests in environmental education. The sectors identified below are represented on the committee to assure planning from a wide range of knowledge and experience. Current members of the Advisory Committee are identified in the appendix. This report was prepared by the Committee with the assistance of staff from member agencies and the WEEC.

This first plan is offered as a vehicle for widespread discussion and is not intended to be a comprehensive plan for environmental education. It seems more desirable to conduct an open and continuing planning process leading to ongoing improvement of planning results and proposals.

Consequently, the Advisory Committee has deliberated for many months to generate a basic structure for guiding discussion and

improvement of environmental education in Wisconsin. It believes that public review of the initial findings and recommendations is now essential so statewide responses are available before formal adoption is sought.

Progress in environmental education can and must begin now. However, such progress can only be sought through current staffs of member agencies, with existing budgetary levels and priorities, and with presently available materials and facilities. While expansion of the state commitment is essential and feasible, it will likely be incremental. Likewise, efforts within other sectors are constrained by prospects for modest expansion. Therefore, the approach of this plan is conditioned by the belief that immediate progress can only come through improving the performance and effectiveness of existing programs. Part of such improvement can be gained by having the guidance of the goals, definition, and purposes for environmental education identified here. Better communication and cooperation are also essential ingredients. Hence, the discussion phase will seek responses, not just to the findings and recommendations, but on what contributions individuals and groups are willing to make and on what role they will play. Without such commitments, this plan cannot succeed.

As part of its process, the Committee collected and analyzed available information on existing activities. It also conducted surveys of several sectors of interest. Nevertheless, comprehensive information could not be obtained for this first report. Data gathering will continue and an analytical inventory will be published later as a supplementary reference.

For planning purposes, the Advisory Committee identified among the Wisconsin public twelve environmental education sectors as targets for improving the performance and contribution of the various participants in environmental education. The twelve sectors are:

Elementary and Secondary Education
Vocational, Technical and Adult Education
College Education
Youth and Student Organizations
Environmental and Conservation Organizations
Service, Fraternal, and Religious Organizations
Citizen and Civic Associations
Agriculture
Business and Industry
Labor Organizations
Instructional and Commercial Media
Government Agencies: Local, State and Federal

During the next phase of planning, the Committee will seek comments and suggestions from people throughout the state. Based on the response, the Committee and Council will revise the report and offer it to the Governor and Legislature as an initial plan for adoption and implementation.

III. GOALS AND OBJECTIVES OF ENVIRONMENTAL EDUCATION

> Since an immense amount of money and effort will certainly be expended on programs of social and environmental improvement in the near future, it is essential that we try to imagine the kind of world we want.
>
> Rene DuBos

A. GOALS OF ENVIRONMENTAL EDUCATION

The fundamental purpose of environmental education is to help us manage, use, protect, and develop our natural resources to sustain and enrich life by providing the information and understanding necessary for choices. It seeks a harmony between man and land. To the extent that quality of life is dependent upon environmental quality, it offers a means for expanding avenues through which we investigate the resource use issues which plague us. It seeks to inculcate in us an enriching appreciation of the beauty and wonder of the natural world. It must provide us with a factual ethical, emotional, and conceptual base for analyzing the environmental effects of our personal and public decisions.

The primary goal of environmental education is to enhance development of an environmental ethic in Wisconsin. Such an ethic must become an operative set of principles and concepts guiding environmental stewardship. For its achievement we must gain better awareness of our dependence upon natural resources for material and esthetic sustenance. There must be concommitant comprehension of the interrelationships of natural systems and of man's participation in those systems - as an influence and as one influenced by them. There must be understanding of our technological capabilities and limitations and of conflicts which

may arise over goals based upon a single concern for technology, economics, politics, esthetics, or ecology. Finally, there must be a response resulting from being better informed. Such activity may range from gaining new enjoyment or pleasure from nature study as an enriching experience, to a personal commitment to work professionally or avocationally for environmental use which balances use and protection. It should involve commitments by individuals to lead personal lives compatible with an environmental ethic.

B. OBJECTIVES OF THE PLAN

The long range objectives of environmental education can only be achieved through the efforts of many people over many years. In this plan we seek only to identify some first steps.

The specific objectives of this plan are to:

1. Establish fundamental goals, a rationale, and a definition of environmental education in Wisconsin.

2. Determine the existing environmental education needs in Wisconsin.

3. Provide a vehicle for development of more comprehensive and coordinated environmental education programs through which Wisconsin's citizens can understand environmental problems, be made knowledgeable about alternative solutions, and be skilled in seeking solutions.

4. Provide a first report as a means for all citizens to have a voice in the planning process.

5. Provide information on existing programs, facilities, and materials derived from the planning process.

6. Recommend the first steps for improving environmental education as initial priorities, and to describe how the recommendations can be implemented.

7. Promote faster exploration and application of a Wisconsin environmental ethic.

IV. PRELIMINARY FINDINGS AND ANALYSIS

> The usual answer...is more conservation education. No one will debate this, but is it certain that only the volume of education needs stepping up? Is something lacking in the content as well?
>
> Aldo Leopold

If Aldo Leopold's questions had been heeded earlier and by more people, Wisconsin would likely have had a citizenry more alert to the mounting problems in maintaining environmental quality. Too few have had environment as a central concern, but their efforts have been distinguished. As we delineate a state program for more effective environmental education, we must look to both the volume of activity and the content. The standards of evaluation are the breadth of understanding and knowledge and the skills possessed by the people of Wisconsin. By such standards, it is apparent that we have not done enough because environmental deterioration is caused or condoned through our uses and abuses of the state's natural resources and a neglect of priority for environmental protection.

The findings resulting from the planning analysis on the general status of environmental education in Wisconsin are:

1. Wisconsin has a strong foundation of experience and expertise and a pioneering heritage of conservation education upon which to build. This heritage has enabled the state to begin responding to the challenge of defining environmental education and initiating the new steps toward accomplishing it.

2. Despite many significant and effective activities, the dynamic public concern for environmental conservation has outpaced the state's environmental education resources. The broader man-centered considerations at the core of environmental education are not yet widely enough applied.
3. Viewing the activities in the state as a whole, there are many unique programs, yet overall the activities are insufficient in strength and distribution.
4. Lacking a state program or policy, the activities are often uncoordinated and without consensus on goals, objectives, or methods. A great opportunity exists to further state performance by enhancing cooperation and complementary effort and by sharing innovations, results, and materials. The value of cooperation is demonstrated in many current joint activities among state agencies. The various segments of the Wisconsin public identified in this report have seldom had the opportunity or mechanism for cooperation and mutual support.
5. Evaluation of environmental or conservation education has been limited in recent years with the result that valuable feedback on needed changes is insufficient to guide planning for improvement.
6. Programs in the state have tended to emphasize developing awareness of natural resources values and of natural processes. Less attention is given to understanding issues and to seeking alternatives for their resolution. Circumstances force us to shift emphasis toward develop-

ing a capability for responsible and environmentally sensitive planning, use, and management decisions. We have relied too much on a scientific or biological base for gaining awareness to the detriment of social and economic considerations. Understanding and motivation cannot be achieved solely through science based programs.

7. The statutory requirements for teacher training in conservation and for instruction of students in conservation are not adequate or effective in providing environmental education as an interdisciplinary experience in Wisconsin schools.

8. Until the creation of WEEC, there was no single focal point for the state's efforts. The agencies having programs and responsibilities have varying priorities, resources, and objectives. In general, environmental education has suffered from a low priority in state programs with improvements inadequate to meet greater demands in recent years. The Council may serve as a vehicle for seeking coordinated progress and improvement.

9. Public excitement over environmental degradation is widespread but there is general misunderstanding, antagonism, and polarity over the necessary decisions and value adjustments. Resolution of issues often involves overcoming high costs and deep conflicts. Environmental education has not yet begun to cope with the complexity of the public issues or to make significant contributions to their resolution.

IV. THE PLAN: PRIORITIES AND RECOMMENDATIONS

One objective of this report is to recommend some initial steps to gain further progress in environmental education in Wisconsin. Many things are desirable, but this plan is limited to those actions which can be accomplished with existing funds, people, materials, and facilities, and which can make an essential contribution to clarification and solution of Wisconsin's environmental issues and problems. To establish such steps, this section identifies first, the types of participants; second, the broad categories of activity to be improved or initiated; and finally, the environmental problem categories of primary current concern.

PARTICIPANTS

To consider who is involved in improving environmental education, twelve sectors have been identified to encompass both those who are providing and receiving environmental education. The following list of sectors includes a few representative examples provided as examples only:

Elementary and Secondary Education: The public and private school systems of the state, the professional education groups, and cooperative educational service agencies.

Vocational, Technical and Adult Education: The post secondary adult, vocational, and technical training programs.

College Education: The University of Wisconsin system and the state's private colleges and universities.

Youth and Student Organizations: The specific programs for young people conducted under a variety of auspices.

Environmental and Conservation Organizations: The Citizens Natural Resources Association, Environment Wisconsin, Izaak Walton League, Garden Club, Nature Conservancy, Sierra Club, Soil Conservation Society, Wisconsin Wildlife Federation and numerous other local and statewide groups.

Service, Fraternal and Religious Organizations: The Kiwanis, Lions, Rotary, Elks, Masons, Knights of Columbus and other groups.

Citizen and Civic Associations: The League of Women Voters, Jaycees, Senior Citizens, American Legion, Veterans of Foreign Wars, Federation of Women's Clubs, and many others.

Agricultural Groups: Farm Bureau, Grange, Soil and Water Conservation Districts, etc.

Business Professions and Industry: Chamber of Commerce, Trees for Tomorrow, American Institute of Architects, etc.

Labor Organizations: AFL-CIO, Teamsters, UAW.

Instructional and Commercial Media: Newspapers, magazines, commercial radio and television, public radio and television.

Governmental Agencies: Local, State and Federal.

Their role in improving environmental education will be considered in the following chapter.

EDUCATIONAL ACTIVITIES

Listed below are thirteen achievable types of activities which can be initiated or strengthened immediately.

Teacher In-Service Education. A survey and analysis of existing programs should be conducted with recommendations for improvements and expansion to be developed under the guidance of a State In-Service Committee sponsored by WEEC.

Issue Education. A multi-media approach should be designed and implemented to generate awareness, understanding and provide skills for public solution of Wisconsin's environmental problems. The major problems are identified in the following section with examples in the Appendix.

Regional Resource Centers. Regional centers for assistance and service in developing educational activities and materials appropriate to a specific region should be established on a demonstration basis in cooperation with state and local interests.

Statutory Review. The existing statutes should be reviewed and amendments or other changes sought in keeping with current goals and needs.

Physical Facilities. An assessment should be made of the distribution, types, and roles of the various public and private facilities with emphasis on the quality and appropriateness of the programs offered. Included here is assistance in program development at the MacKenzie Environmental Education Center with recognition of the opportunities for experimentation.

Adult Training. The needs for training of volunteer and professional people in environmental fields should be analyzed in relation to the adequacy of existing programs. An analysis should result in identification of specific projects for improving leadership capability and technical proficiency.

State Clearinghouse. A permanent state planning, coordinating and clearing house organization is needed to provide a focus for continuing planning, evaluation, and assistance.

Instructional Television. The current contribution of instructional television to environmental education in the state should be assessed along with the availability of programs from national sources or other states. The potential role of environmental programming should be evaluated.

Environmental Impact Review Program. As a new process for assuring that environmental safeguards are considered in development decisions, environmental impact review requires public understanding and participation. Providing the understanding and skills offer a significant opportunity for environmental education. The success of the process depends upon public participation in review and in hearings. An analysis of the information needs and sources, the procedures for public involvement, and the potential difficulties should be undertaken as a basis for providing guidance to environmental organizations and individuals seeking to participate. The state should assume an obligation to assure a public contribution to the process.

Curriculum Improvement. Along with an assessment of existing efforts to develop stronger environmental curricula, some demonstration projects or other improvement activities should be identified and supported.

School-Community Activity. Students gain a clearer perception of environmental education when they study environmental problems facing their own community. At the same time, community awareness can be increased along with understanding of alternative solutions. A review of existing approaches should be undertaken as a basis for considering some further demonstrations.

Environmental Education Research. Current research should be reviewed in relation to needs and deficiencies in instruction, materials, and facilities and to provide a basis for coordination between applied programs and research activity.

Governor's Conference. A second Governor's Conference on Environmental Education should be held to communicate the elements of the state plan, to gain advice and evaluation of the recommendations, and to seek cooperation in its implementation.

Most of the items call for extension of the planning process and are essential links to implementation. They identify the more intensive investigations that are necessary to develop detailed activity recommendations and to evaluate alternative potential projects.

PRIMARY ENVIRONMENTAL ISSUES

The third dimension of this plan's recommendations focuses on the problems of environmental protection, use, or management which can be best resolved by better public awareness and understanding of the issues and alternatives. This dimension adds substance to the priorities section. They are current relevant concerns upon which to focus improvement of environmental education. Such improvement will indicate what contribution environmental education can make to resolving environmental conflict and misunderstanding. Further, identification of priority issues helps make distinct a key objective of environmental problems to gain their resolution. Any list of issues can become rapidly out of date so the proposed priorities are based, where possible, on general categories of issues which have one or more current examples along with a few unique items offering a special challenge. For some items, the matter is of such widespread concern that no single example typifies it, such as solid waste disposal. The following are offered as

broad problem categories within which specific examples of conflicts or issues can be identified and which deserve priority attention by all sectors:

ENERGY: Rising costs, concern over adequacy of supplies, and environmental impacts of providing and distributing energy make it a major issue especially challenging because of its complexity. Environmental considerations are only a portion of the issue, but they typify the difficulty in reconciling mounting undesirable environmental costs with unrestrained demands.

BALANCED TRANSPORTATION: The movement of people in Wisconsin is based on a system favoring private automobiles over other means which may have greater efficiency and fewer environmental hazards. We have not solved our problem by larger commitments to highway construction and are hampered further by the dearth of strong alternatives necessary for a comprehensive system.

MINING: New interest in mining of mineral ores in the state is accompanied by concern over the environmental effects which may result during and after mining. Some of the concern is directed toward the adequacy of state and local regulations.

ENVIRONMENTAL HEALTH HAZARDS: Air, water, and land pollution remain as basic threats whether in urban or rural areas. Among the issues are levels of toxic substances permitted in waste discharges, the potential for recycling, use of pesticides for vegetation control and for wildlife and fisheries management. Also timely are concern for noise, urban and rural blight, and the constraints on achieving comprehensive area wide programs for waste disposal and recycling.

WATER RESOURCE DEVELOPMENT: Public management and development of water resources arouse controversy when existing social, economic, and natural patterns are threatened. Unfortunately most of the controversy occurs because planning lacks comprehensiveness and may be unduly directed toward technical solutions without adequate concern for nonstructural alternatives including problem prevention.

PRIVATE RECREATIONAL DEVELOPMENT: Large scale private developments, often based on artificial lakes, have been a concern because of detrimental effects on free flowing streams and on nearby public resources, the potential for failure of water and sewer systems, and the stresses on roads and police and fire services.

LAND ALLOCATION AND REGULATION: A Governor's Land Resources Committee is completing a comprehensive assessment of Wisconsin's state and local capability to protect public interest in and dependence upon land resources. Despite a pioneering step in regulation of flood plains, the state is suffering from an increasing degradation of valuable resources, partly resulting from conflicts between rights and desires of private landowners and administration statutes, regulations, and ordinances. The need for a growth policy is another facet.

LOCAL CRITICAL ISSUES: In any community there are unique issues requiring resolution. Those issues should be identified and used as illustrations for environmental education in community schools and by civic, environmental, and related organizations.

THE ISSUE APPROACH: A RATIONALE

The issue approach is important because it seeks improved understanding of the specific conflicts and alternative choices. Each issue also illustrates the human dilemma of resource use which may result in potentially harmful side effects, misallocation, quality deterioration, or involve restoration and other dimensions of improvement. Deeper study can lead to a search for underlying guiding principles of an environmental ethic. Thus, the issues are current illustrations of a continuing struggle within society to apply an ecologically sound approach to environmental use. Some current examples are listed in the Appendix.

Perhaps then, examination of a pressing issue will lead us to question our attitudes which may generate undue and unsustainable demands on natural resources, or cause conflicts among uses which have varying benefit to society.

The question may be raised, why concentrate on a few central and controversial issues? The essence of environmental education, as a purposeful public activity, is an objective comprehensive grappling with the direct problems of environmental quality which confront us in Wisconsin. Environmental education is a complex process which must center on relevant concerns. We do not yet know what contribution an environmental ethic can make to our individual lives and to public goals, but we will begin to understand by considering our specific problems and issues.

Further, the approach offers a way to consider what educational resources are available for analyzing, discussing and educating about respective issues, and who is involved in vital decisions.

Third, the issue concentration provides a finite basis for educational programming. The issues are current now but may be replaced by others in a few years. This plan must be reexamined and evaluated for its ongoing timeliness and effectiveness.

Fourth, the issues clearly reveal how complex and interrelated environmental problems are. They suggest a cooperative, multi-faceted approach with attention to demonstrations and testing.

SUMMARY

This plan proposes a three pronged effort for advancement of environmental education in Wisconsin. One part identifies a group of contributors who are vital to strengthening environmental education performance. Included are sectors now carrying the greatest burden of effort as well as ones whose potential is scarcely realized.

Next, the recommended program offers a challenging list of specific educational activities which can guide the way to action in immediate steps.

Finally, the plan attempts to respond to the broad public concern for environmental questions which are also perceived as economic, social, esthetic, political, and technological matters. Solutions can be determined only through the most widespread possible understanding of the environmental, moralistic, and ethical implications. Environmental education is too often a neglected contributor to the understanding process.

V. IMPLEMENTATION PROCESS

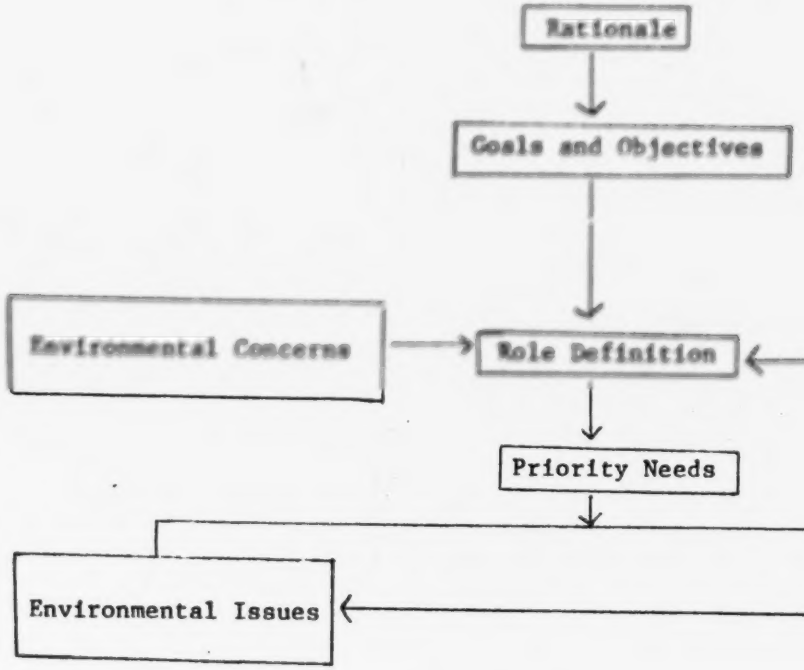
Few more arduous tasks could be undertaken than one to instill an environmental ethic in Wisconsin's citizens. Under the best conditions such a goal cannot be realized quickly. However, the available tools and energy are limited. Nevertheless, with some redirection, more cooperation and more efficient use of available resources increasingly effective environmental education can occur.

Although many agencies and organizations, both public and private, are providing strong service in environmental education, by general consensus among such groups, they are not doing enough. With what and how to expand and improve? How to implement this report's recommendations? One step is to more precisely determine the needs, which if met, would aid each sector in improving their activities. Another is to determine what role each sector can and should play and how such roles interrelate in accomplishing Wisconsin's objectives. The types of implementation activities which are discussed below are only a beginning. They are offered as a core of action which must be expanded, revised, tested, and evaluated. Implementation will not be achieved by publication of this report. It attempts to set the stage for, and to offer a challenge to, the myriad of individuals and groups whose commitments will bring implementation. Like exploration of imperfectly known lands, this report explores the emerging environmental education movement and offers some general, even crude, charts for further exploration. With general dimensions charted, each sector can examine its territory and determine what further

progress to seek. As a tool to assist in analyzing the role of sectors, three charts are provided as aids for further detailed planning. One chart illustrates the overall environmental education process used in Wisconsin. The second chart provides an example of one sector analysis. The third blank chart is offered for consideration by each reader. During public discussion of the draft plan, each sector should consider the recommendations in this plan and use the chart to assess its needs for improvement and its existing and potential contributions.

Each reader should consider his own and other sectors to identify a potential contribution. For example, we should not be satisfied with leaving improvements in the elementary and secondary sector only to teachers and administrators. They need support and assistance, even the demands, of concerned citizens and organizations in order to accomplish the deeply penetrating changes necessary to build environmental education into a school curriculum. The primary activity in elementary and secondary education is, of course, performed by local school districts. State responsibility rests primarily with the Department of Public Instruction with important responsibility also resting with the Department of Natural Resources and the University of Wisconsin. Instructional television and radio are provided by the Educational Communications Board. Further, environmental organizations have an opportunity to directly assist and reinforce efforts in ways that will enrich the curriculum and support teachers and administrators seeking to include environmental education. Industry too can play a role as illustrated by the pioneering contribution of Trees for Tomorrow, sponsored by a group

ENVIRONMENTAL EDUCATION PLANNING PROCESS



1. Development of philosophical base and fundamental analysis of need.
   Chapter I

2. Establishment of goals for environmental education and development of overall planning approach.
   Chapter III

3. Analysis of environmental concerns and sector activities to determine functions and roles.
   Chapter IV

4. General activities recommended to gain understanding and skills in response to basic concerns.
   Chapter V

5. Choice of specific activities aimed at aiding public decisions on current issues.
   Chapter VI

Chart 1

A MOD[illegible] SECTOR ANALYSIS

ROLE OF BUSINESS AND IND[illegible]STRY SECTOR

1. Each sector should review and concu

Overall Rationale
(See Chapter I, Part A)

2. Each sector should consider its needs in relation to objectives.

Overall Goals and Objectives
(See Chapter III)

3. Expand initial findings through detailed surveys and analysis.

Assessments by Other Sectors → ← Business and Industry Sector Inventory and Assessment (See Chapter IV)

Role Definition by Business and Industry Sector

As producers of goods & services, employers, and users of resources, industry has a vital stake in environmental education. Need exists for a closer working relationship with educational agencies and improved communications with all citizen audiences.

4. Consider relationships to overall recommendations in chapter V.

5. Use chapter V in the analysis.

Needs and Objectives of Business and Industry Sector

Industry has failed to provide public and opinion leaders with adequate information about their societal role and activities. Objective: Improved flow of information from industry and more direct avenues of communication with key agencies and leading citizens.

6. Develop issues concentration and recommended activities through analysis of chapter VI.

Identification of Sector Environmental Issues

Issue A

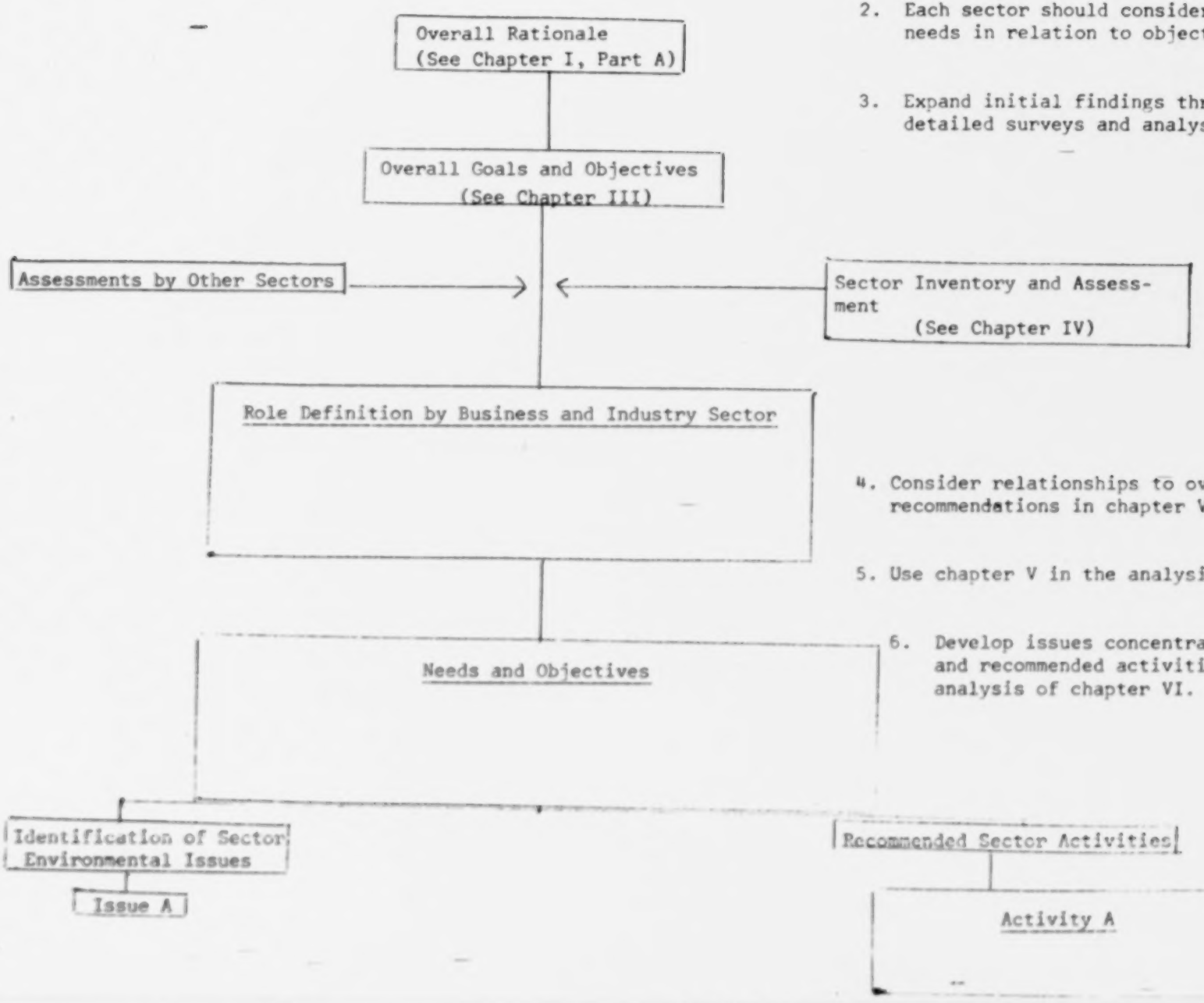
Recommended Sector Activities

Activity A
Conduct informational workshops (between industry, teachers, state agencies, legislators, etc.)

Chart 2

A MODEL SECTOR ANALYSIS

ROLE OF BUSINESS AND INDUSTRY SECTOR



1. Each sector should review and concur.
2. Each sector should consider its needs in relation to objectives.
3. Expand initial findings through detailed surveys and analysis.
4. Consider relationships to overall recommendations in chapter V.
5. Use chapter V in the analysis.
6. Develop issues concentration and recommended activities through analysis of chapter VI.

Chart 3

of paper companies, which provides an educational camping experience for school children and other groups. The same opportunity and challenge prevail in each sector. There must be cross fertilization and reinforcement among the sectors before environmental education becomes a contributor to environmental stewardship.

While this report does not have adequate information upon which to suggest and describe pressing opportunities within and among each sector, many desirable activities have been identified as an essential core to be examined by Wisconsin's citizens and groups. Each should find many challenges.

A. State Agencies

In addition to efforts identified under other sectors, the member agencies should undertake the following:

1. Consider how each agency can contribute to dissemination of information for the public on major environmental issues.

2. Review existing statutes by each agency for their adequacy in accomplishing environmental education objectives recommended in this plan. WEEC should undertake a comprehensive analysis with the assistance of its member agencies.

3. Inventory and review of uses of existing field facilities for environmental and related education including their distribution to identify gaps and opportunities for improvement in service.

4. Evaluate how each agency provides for training of staff to identify needs for providing specific programs dealing with ethical and social implications of professional service affecting the state's environmental resources.

5. Consider what educational responsibilities and service opportunities exist as contributions to continuing state review of development proposals having environmental impacts.

6. Investigate cooperatively how a state clearinghouse can be established to build upon existing communication and service resources.

B. Environmental and Related Groups

1. Identify priority issues for comprehensive analysis and cooperate with WEEC in initiating educational efforts for increasing public understanding.

2. Participate in analyses of the role and makeup of regional information centers and a state clearinghouse by indicating the services necessary for improving environmental information. Continue to support Environment Wisconsin as a privately supported information and service center.

3. Undertake programs of leadership training for environmental group members.

4. Participate in demonstrations of innovative school/community environmental studies suggested under part C.

5. Assist in conducting educational programs for increasing the capability of Wisconsin's citizens to participate in the environmental impact review process.

C. Elementary and Secondary Education

1. Provide additional in-service education programs for Wisconsin elementary and secondary teachers to prepare them for interdisciplinary integrated environmental education programs. What approaches to pursue should be identified through a special study of opportunities and needs which should be undertaken by the WEEC with the participation of the Department of Public Instruction and the University of Wisconsin system. Other contributors may include the Department of Natural Resources, U.S. Forest Service, U.S. Bureau of Sport and Wildlife, Trees for Tomorrow, professional educational associations, and CESA's.

2. Initiate a program of assistance for improvement and development of school sites as resources for environmental education.

   The WEEC should form a cooperative team from staff resources of the Department of Natural Resources, Department of Public Instruction, the University of Wisconsin system, the U.S. Forest Service, and the U.S. Soil Conservation Service to undertake the following:

   a) a cooperative agreement on how assistance can be provided to schools

   b) a workshop for a small group of interested schools to develop a few demonstration projects

   c) a guidebook summarizing the value of school site development, available assistance, and some general suggestions for development and use.

3. Consider similarly the development and use of off-site facilities such as school forests, nature centers, and outdoor laboratories. In many instances, facilities may be available through the cooperation of park departments, nature clubs, sportsmen's organizations, garden clubs, service clubs, and conservation organizations.

4. Develop a model component of curriculum improvement based on interdisciplinary study of local and state environmental issues. The elements of the component should include community participation, and the results should assist the community in its understanding of alternatives to resolve an issue. For students the component should provide direct experience in current problems in their various political, social, economic, and ecological ramifications along with an opportunity to perceive a role in prevention and correction of environmental deterioration through personal decisions and civic participation.

   The WEEC should initiate the project through its Advisory Committee with suggestions and assistance from Council agencies and state environmental and citizen action organizations.

5. Prepare a current reference guide for teachers on recommended materials for environmental education containing the following sections:

   a) teaching methods

   b) environmental references

   c) philosophy and concepts of environmental protection and conservation.

   WEEC should form a special committee consisting of representatives of the University of Wisconsin, private colleges, Department of Public Instruction, Department of Natural Resources, Vocational, Technical and Adult Education Board, Council of Wisconsin Librarians, education associations, CESA's and its Advisory Committee to evaluate materials and any existing guides.

D. COLLEGE EDUCATION

1. Form a committee representative of the University of Wisconsin System to review and evaluate its existing contribution to preservice and inservice teacher training according to the objectives of this report.

2. Consider the role of the University System and private colleges in furthering public understanding and skill in environmental issue analysis. Dissemination of research findings and the professional judgments of staff should be specifically considered as existing basic avenues of service to the state in public deliberation over issues.

3. Consider specifically how the particular resources of University Extension can contribute to accomplishment of this report's general recommendations, particularly those requiring models and demonstrations with field assistance.

4. Develop a regular, perhaps annual, mechanism for reporting results of the University's educational research pertinent to improvement of environmental education.

E. INDUSTRY AND BUSINESS

WEEC should form through its Advisory Committee an industrial subcommittee to consider the following;

1. Participation in statewide analysis of environmental issues to bring the industrial viewpoint to the process.

2. Consider the role of industry in developing a regional system of information centers.

3. Assist in improving the contribution of media, particularly television, to understanding of environmental issues.

4. Examine the role of Trees for Tomorrow as a precedent for and example of industrial support for environmental education achieved through the school camping program.

F. INSTRUCTIONAL AND COMMERCIAL MEDIA

1. Identify the opportunities and develop programming for use of instructional television as a means for inservice teacher education and for complementary general environmental education for Wisconsin's citizens. WEEC and the Educational Communications Board should form a committee to consider existing and potential roles of the state educational network.

2. Consider the information needs of the media for an effective contribution to public discussion of issues and review of environmental impacts. This effort should be initiated by WEEC with the participation of press, radio and television groups, and state information personnel.

G. VOCATIONAL, TECHNICAL AND ADULT EDUCATION

1. The Board of Vocational, Technical and Adult Education should form an advisory committee to determine the feasibility of establishing programs designed to supply employees for environmental occupations. Such programs should become established based on the expressed needs of industry and government, and offer vocational and/or technical training.

2. The Board of Vocational, Technical and Adult Education should develop guides for incorporating environmental education concepts into all programs. All participants, both instructors and students, in this educational system should have an opportunity to learn how some of these concepts interface with their chosen occupation.

3. Leadership for promoting environmental education in the VTAE System should originate from the state staff environmental education committee, and be directed toward the districts for implementation, however each district should have at least one representative on the committee if they desire.

4. Private schools offering post-secondary and adult vocational and technical training should be encouraged to participate in all applicable environmental education.

H. OTHER COOPERATIVE ACTIVITIES

In addition to the preceding activities, WEEC should begin a few specific activities to better fulfill not only its purposes but also those of the identified sectors. Those activities include:

1. Analysis of statutes to identify changes which would enhance the state's environmental education efforts.

2. Consideration of the need for a systematic means, such as a newsletter, to stimulate statewide communication about activities, materials, and issues.

3. Assistance to models, demonstrations, and related projects of statewide significance in the form of small matching grants in order to stimulate and gain assessment of various innovative approaches. A basic program of $50,000.00 annually should support about five to ten projects.

4. Investigation of the potential contribution of Wisconsin's Indians to development of an environmental ethic. The cultural heritage of Wisconsin's Indian citizens offers a unique perspective of human attitudes toward survival and spiritual values.

APPENDIX

EXAMPLES OF CURRENT ENVIRONMENTAL ISSUES

Energy: Columbia County Power Plant - concern has been raised over flood plain encroachment and potential effects on the area's air and water resources.

Balanced Transportation: Interstate Route 57 - controversy centers on the corridor location rather than on the need for a freeway.

Milwaukee Freeway System - controversy includes questions of encroachment on residential neighborhoods and parks and of continuing emphasis on private automobile.

Mining: Ladysmith Copper Deposit - concern over long range effect of pit mining have been expressed in terms of adequacy of state mining regulations.

Environmental Health Hazards: No specific examples are suggested since such hazards take many forms.

Water Resource Development: The Kickapoo River controversy - between those favoring and those opposing construction of a flood control resevoir. Some contend the project is not needed and is not justified; and further will destroy environmental values and such uses as stream canoeing. Proponents contend the project will bring significant recreation benefits to an economically depressed area.

Private Recreational Development: Legend Lake is an example of artificial lake construction which has become controversial because of local social issues, water diversion, and dam construction. Earlier projects such as Redstone Lake illustrate potential water quality problems.

Land Allocation and Regulation: The recent Wisconsin Supreme Court decision upholding the State's authority to zone against wetlands encroachment in Just vs. Marinette County illustrates the issue of balancing public interest and private property rights.

NOTE: The Final Report of the Wisconsin Land Resources Committee provides a comprehensive analysis and recommendation on pressing issues in land use and maintenance of environmental quality.

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REVIEW OF ENVIRONMENTAL EDUCATION PLAN

Chapter I: Rationale: Agree_____ Disagree_____

Definition: Agree_____ Disagree_____

Chapter II:

Goals of EE: Agree_____ Disagree_____

Objectives of Plan: Agree_____ Disagree_____

Chapter III:

Findings: Agree_____ Disagree_____

Chapter IV:

Classification of Participants:

Recommended Activities: Agree_____ Disagree_____

Issues Priorities: Agree_____ Disagree_____

Chapter V Recommendations for:

State Agencies: Agree_____ Disagree_____

Environmental groups: Agree_____ Disagree_____

Elementary and Secondary Education: Agree_____ Disagree_____

Higher Education: Agree_____ Disagree_____

Instructional and Commercial Media: Agree_____ Disagree_____

Other Cooperative Activities: Agree_____ Disagree_____

Please use reverse side to:

1) comment on any choices above
2) suggest additional programs or activities
3) suggest other state or local issues
4) indicate activities which you or your organization believe can be a cooperative contribution to plan implementation. (Also indicate potential contribution) (Include name, affiliation, and address for WEEC followup.)

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